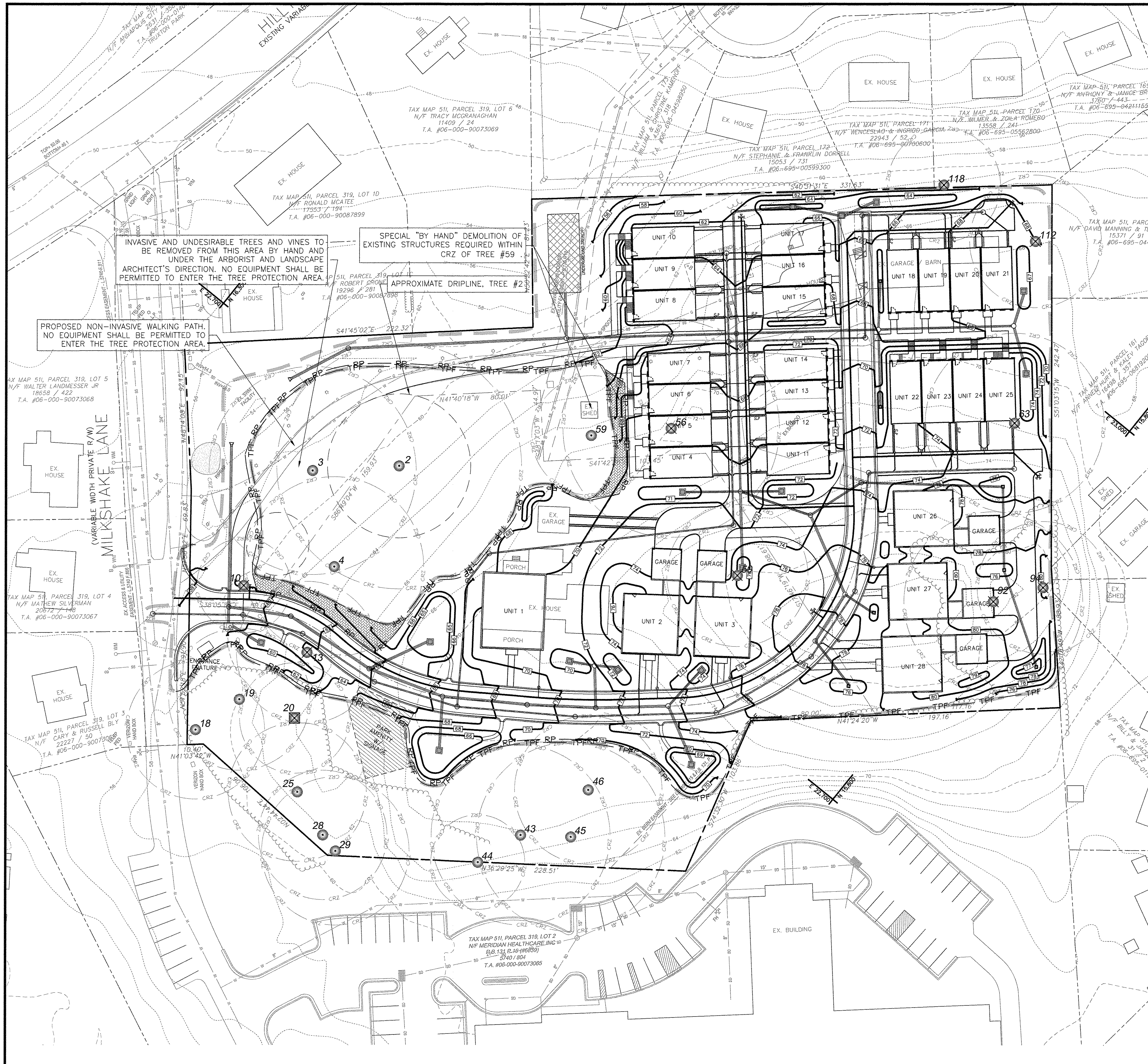

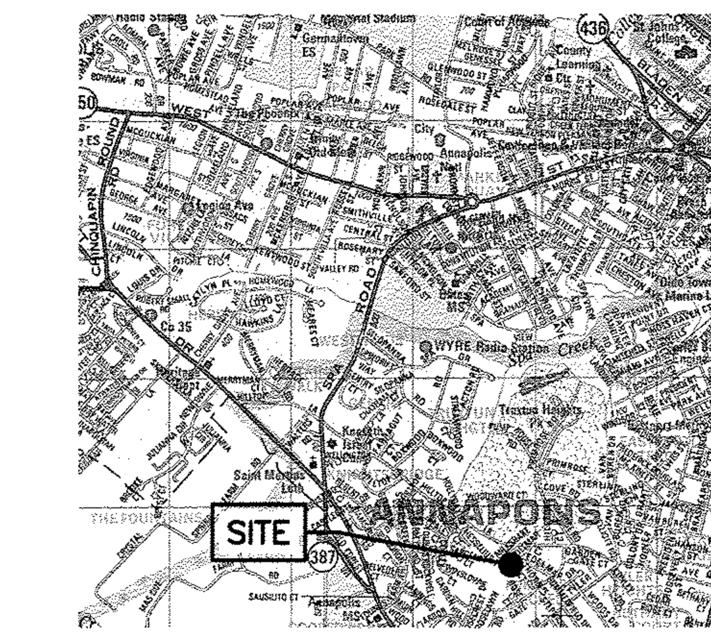

VICINITY MAP

SCALE: 1" = 2000'

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PERMITTED USE NO. 0830120

LOTS 1A-R AND 1B-R
3 MILKSHAKE LANE

TAX MAP 51I, GRID 4, PARCEL 319
CITY OF ANNAPOLIS, MARYLAND
SIXTH DISTRICT, ANNE ARUNDEL COUNTY
ZONED R2
TOTAL SITE AREA = 4.35 ACRES
TOTAL FOREST AREA = 0 ACRES
TOTAL FLOODPLAIN AREA = 0 ACRES

LEGEND

- EXISTING TREE WITH CRITICAL ROOT ZONE (CRZ) TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE REMOVED BY ARBORIST (SEE SPECIFICATIONS)
- TPF — PROPOSED TREE PROTECTION FENCE (SEE DETAIL & SPECIFICATIONS)
- RP — PROPOSED ROOT PRUNING (SEE DETAIL & SPECIFICATIONS)
- PROPOSED LOD
- PROPOSED ROOT AERATION MATTING (SEE DETAIL & SPECIFICATIONS)

GENERAL SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO COMMENCEMENT OF DEMOLITION/CONSTRUCTION ACTIVITY. CITY OF ANNAPOLIS DEPARTMENT OF NEIGHBORHOOD AND ENVIRONMENT, OWNER, DESIGN TEAM MEMBERS (PROJECT ARBORIST, LANDSCAPE ARCHITECT, ENGINEER AND ARCHITECT), CONTRACT ARBORIST, SITE AND LANDSCAPE CONTRACTORS SHALL ATTEND.
2. CONDUCT ROOT PRUNING AND INSTALL TREE PROTECTION FENCE.
3. INSTALL ROOT AERATION MATTING (RAM). INSTALL TEMPORARY FENCE AROUND RAM AREAS.
4. INSTALL TEMPORARY CONSTRUCTION ENTRANCE.
5. COORDINATE SILT FENCE INSTALLATION WITH ARBORIST AND ROOT PRUNING ACTIVITY TO MINIMIZE ROOT DISTURBANCE.
6. BEGIN REMOVAL OF UNDESIRABLE AND INVASIVE VEGETATION FROM WITHIN TREE PROTECTION AREAS.
7. INSTALL MULCH IN TREE PROTECTION AREAS.
8. BEGIN SOIL CARE TREATMENTS AND SCHEDULE OF TREE CONDITION INSPECTIONS. REPORTS OF ALL INSPECTIONS SHALL BE SUBMITTED TO THE CITY AND OWNER.
9. CONTACT CITY OF ANNAPOLIS DEPARTMENT OF NEIGHBORHOOD AND ENVIRONMENT FOR INSPECTION OF TREE PROTECTION AND EROSION CONTROL MEASURES.
10. BEGIN CLEARING AND GRADING UPON CITY APPROVAL.
8. BEGIN SCHEDULE OF CONSTRUCTION OVERSIGHT/MONITORING INSPECTIONS. REPORTS OF ALL INSPECTIONS SHALL BE SUBMITTED TO THE CITY AND OWNER.
9. TEMPORARY FENCE AROUND RAM MAY BE REMOVED IMMEDIATELY PRIOR TO GRADE FILL IN THOSE AREAS. CONSTRUCTION TRAFFIC IN THESE AREAS SHALL BE MINIMIZED.
10. MAINTAIN ALL TREE PROTECTION FENCE THROUGHOUT CONSTRUCTION. FENCE MAY BE REMOVED ONLY WITH CITY APPROVAL.

0 15 30 60 Feet
1:360

DRAWN:	C.J.H.	REV. NO.
DESIGN:	C.J.H.	2
CHECKED:	C.A.C.	

BASED ON PLANS PROVIDED BY BAY ENGINEERING

REV.	DATE	COMMENT	BY
2	2/6/2014	PER CITY COMMENT AND REVISED CIVIL	CH
1	11/13/2013	PER CITY COMMENT AND REVISED CIVIL	CH

STATE OF MARYLAND LICENSED FORESTER CHRISTOPHER COWLES NO. 323 BOARD OF FORESTERS 02-06-2014

DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company

Land Development Solutions
2138 Priest Bridge Ct, Suite 4, Crofton, MD 21114
Office 410.774.0024 • Fax 310.858.0184
National 877.818.7337

PRELIMINARY
FOREST CONSERVATION PLAN

PRIMROSE HILL

3 MILKSHAKE LANE
CITY OF ANNAPOLIS, MARYLAND

CLIENT: ELM STREET DEVELOPMENT

SCALE: 1" = 30'

DATE: 07/02/2013

SHEET NO: LJ-101

TREE PRESERVATION SPECIFICATIONS

1. GENERAL
 1.1. ALL MEASURES WILL BE REVIEWED AFTER INSTALLATION AND APPROVED BY OWNER AND *CITY OF ANNAPOLIS*.
 1.2. SUBSTITUTIONS OR ALTERNATIVE METHODS OR MATERIALS SHALL BE REVIEWED AND APPROVED BY THE PROJECT ARBORIST AND *CITY OF ANNAPOLIS*.
 1.3. ALL TREE PROTECTION MEASURES MUST BE IN PLACE PRIOR TO COMMENCEMENT OF DEMOLITION, SITE CLEARING OR CONSTRUCTION AND MAINTAINED THROUGHOUT CONSTRUCTION. TREE PROTECTION MEASURES MAY ONLY BE REMOVED WITH *CITY OF ANNAPOLIS* APPROVAL.
 1.4. REFER TO THE TREE PROTECTION ACTION KEY (TPAK) FOR SPECIFIC RECOMMENDATIONS FOR EACH TREE.
2. REMOVAL BY ARBORIST
 2.1. TREES DESIGNATED AS "REMOVAL BY ARBORIST" SHALL BE REMOVED BY A QUALIFIED ARBORIST "BY HAND", TO MINIMIZE POTENTIAL FOR DAMAGE TO REMAINING TREES AND ROOTS.
 2.2. CREWS SHALL BE DIRECTLY SUPERVISED BY A CERTIFIED ARBORIST.
 2.3. TRUCKS AND MECHANIZED EQUIPMENT SHALL NOT ENTER THE FENCED TREE PROTECTION AREAS.
 2.4. STUMPS SHALL BE LEFT IN PLACE OR GROUND OUT AT THE OWNERS DISCRETION. STUMPS IN TURF/LANDSCAPE AREAS OR WITHIN ROOT AERATION MATTING AREAS SHALL BE GROUND.
 2.5. STUMP GRINDING SHALL BE WITH SMALL MACHINES SPECIFICALLY DESIGNED FOR THAT PURPOSE. NO STUMPS SHALL BE EXCAVATED EXCEPT AS DESCRIBED HEREIN. STUMPS SHALL BE GROUND NOT MORE THAN 8" BELOW GRADE AND CARE MUST BE TAKEN TO MINIMIZE DAMAGE TO ROOTS OF RETAINED TREES.
3. TREE PROTECTION FENCE
 3.1. TYPICALLY, INSTALL AFTER ROOT PRUNING AND PRIOR TO CLEARING & GRADING.
 3.2. FENCE SHALL BE ONE OF THE FOLLOWING: (SEE DETAIL)
  3.2.1. 6' HIGH CHAIN LINK FENCE FABRIC MOUNTED ON 8', 1.5"ø GALVANIZED STEEL PIPE LINE POSTS. CORNER POSTS SHALL BE 2"ø. FENCE SHALL BE ATTACHED TO POSTS USING ALUMINUM TIES. PLASTIC "ZIP" TIES SHALL NOT BE USED.
  3.2.2. SUPER SILT FENCE INSTALLED PER LOCAL AND STATE EROSION AND SEDIMENT CONTROL REQUIREMENTS AND SIGNED AS TREE PROTECTION.
 3.3. TREE PROTECTION AREA SIGNS SHALL BE AFFIXED TO ALL TREE PROTECTION FENCE AT 30' SPACING AVERAGE. SIGNS SHALL BE BILINGUAL (ENGLISH AND SPANISH). SIGNS SHALL NOT BE AFFIXED DIRECTLY TO TREES.
 3.4. SILT FENCE SHALL BE COORDINATED FOR INSTALLATION TO ENHANCE PROTECTION AND AVOID UNNECESSARY ROOT CUTS BY SILT FENCE INSTALLATION.
 3.5. FILTER LOGS SHALL BE USED ALONG TREE PROTECTION AREAS IN ADDITION TO CHAIN LINK FENCE.
 3.6. FENCE MAY BE REMOVED ONLY AFTER ALL CONSTRUCTION AND FINAL LANDSCAPING IS COMPLETE AND WITH *CITY OF ANNAPOLIS* APPROVAL.
4. TEMPORARY TREE PROTECTION FENCE
 4.1. INTENDED TO PROTECT SENSITIVE AREAS DURING PORTIONS OF CONSTRUCTION. SPECIFICALLY, AREAS OF RAM SHALL BE PROTECTED WITH TEMPORARY FENCE UNTIL FILL MATERIAL IS PLACED TO AVOID UNNECESSARY ROOT IMPACTS.
 4.2. FENCE SHALL BE 4' HIGH, 14 GAUGE WELDED WIRE FENCE INSTALLED AS ABOVE (SEE DETAIL) OR APPROVED ALTERNATIVE.
 4.3. TEMPORARY FENCE SHALL BE REMOVED ONLY WITH ARBORIST APPROVAL.
5. ROOT PRUNE
 5.1. THE EXACT LOCATION AND DEPTH WILL BE DETERMINED DURING THE PRE-CONSTRUCTION MEETING. SPECIFIC EQUIPMENT & METHODS WILL BE DETERMINED BY *CITY OF ANNAPOLIS* BASED UPON DEPTH & TREE IMPACT. (SEE DETAIL)
 5.2. HAND PRUNE ROOTS OVER 1.5" DIAMETER WITHIN CRZS OF SIGNIFICANT TREES. STEEP SLOPES, DEEP EXCAVATIONS AND PAVEMENT/CURB REMOVAL WILL BE REVIEWED WHEN OPEN FOR HAND ROOT PRUNING DURING CONSTRUCTION.
 5.3. COORDINATE WITH SILT FENCE INSTALLATION TO MINIMIZE UNNECESSARY ROOT DAMAGE.
 5.4. ROOT PRUNING SHALL BE PERFORMED BY A CERTIFIED ARBORIST.
6. WOOD CHIP MULCH
 6.1. INSTALL MULCH BED RINGS FOR DESIGNATED SIGNIFICANT TREES OR PROVIDE CONTINUOUS MULCH STRIP 10' TO 15' WIDE ALONG LOD WITHIN PRESERVED CRZ AREAS.
 6.2. MULCH SHALL BE INSTALLED TO A DEPTH OF 4".
 6.3. MULCH SHALL BE DOUBLE GROUND SHREDDED HARDWOOD, AGED FOR AT LEAST 6 MONTHS FROM AN APPROVED SOURCE. INSUFFICIENTLY OR IMPROPERLY AGED MULCH CONTAINING HIGH BACTERIAL COUNTS OR HIGH LEVELS OF BARK OR OTHER MATERIALS RESISTANT TO DECOMPOSITION SHALL NOT BE USED. MULCH SHALL NOT CONTACT TRUNK OF TREES.
 6.4. EDGING IS NEITHER NECESSARY NOR DESIRABLE FOR THIS OPERATION.
7. CONSTRUCTION MONITORING/INSPECTIONS
 7.1. A CERTIFIED ARBORIST SHALL MAKE REGULAR MONTHLY INSPECTIONS DURING ACTIVE CONSTRUCTION AND DEMOLITION AND PROVIDE REPORTS TO THE OWNER AND *CITY OF ANNAPOLIS*. REPORTS SHALL DOCUMENT CONDITION OF TREE PROTECTION DEVICES AND PROVIDE RECOMMENDATIONS FOR MAINTENANCE AND/OR ADDITIONAL CARE.
8. MISCELLANEOUS TREE PROTECTION REQUIREMENTS
 8.1. NO TOXIC MATERIALS SHALL BE STORED WITHIN 100' OF TREE PROTECTION AREAS.
 8.2. ALL WORK IN OR NEAR TREE PROTECTION AREAS SHALL BE PERFORMED IN A MANNER TO MINIMIZE DAMAGE TO TREES, SHRUBS, GROUND COVER, SOIL AND ROOT SYSTEMS.
 8.3. MECHANIZED EQUIPMENT SHALL NOT BE PERMITTED TO ENTER ANY TREE PROTECTION AREAS.
9. CANOPY PRUNING & SUPPORT CABLES
 9.1. CANOPY PRUNING SHALL BE CLEANING PRUNING AND/OR RESTORATION PRUNING AND SHALL BE IN CONFORMANCE WITH CURRENT ANSI A300 STANDARDS AND ISA BEST MANAGEMENT PRACTICES.
 9.2. PRUNING SHALL REMOVE ONLY DEAD, DYING, DAMAGED OR BROKEN BRANCHES GREATER THAN 1" IN DIAMETER. PRUNING OF SMALL TREES MAY INCLUDE REMOVAL OF LIMBS TO IMPROVE STRUCTURE.
 9.3. FOLIAGE REMOVAL SHALL NOT BE MORE THAN 25% OF THE TOTAL LIVE CANOPY VOLUME OF ANY TREE IN ANY ONE SEASON. PRUNING SHALL NOT REMOVE INTERIOR BRANCHING EXCEPT AS OTHERWISE STATED.
 9.4. PRUNING FOR SPECIFIC CLEARANCE (FOR CONSTRUCTION ACCESS OR PROPOSED IMPROVEMENTS) SHALL BE REVIEWED AND APPROVED BY THE OWNER AND *CITY OF ANNAPOLIS*.
 9.5. SUPPORT CABLES SHALL BE INSTALLED IN CONFORMANCE WITH CURRENT ANSI A300 STANDARDS AND ISA BEST MANAGEMENT PRACTICES.
10. CONSTRUCTION STRATEGIES FOR TREE PROTECTION
 10.1. PROPOSED LANDSCAPE PLANTINGS OUTSIDE THE LOD SHALL BE INSTALLED BY HAND. MECHANIZED EQUIPMENT SHALL NOT BE USED OUTSIDE THE LOD OR OFF OF EXISTING PAVED AREAS TO EXCAVATE FOR PLANTINGS OR FOR STAGING PLANT MATERIAL.
 10.2. COORDINATE PLANTING LOCATIONS WITHIN CRZS WITH THE CONTRACT ARBORIST TO AVOID UNNECESSARY ROOT DAMAGE. PLANTING PITS WITHIN CRZS SHOULD BE DUG BY HAND. ROOTS GREATER THAN 1.5" SHOULD NOT BE CUT.
11. ROOT PROTECTION MATTING
 11.1. TEMPORARY MATTING TO PROTECT EXISTING ROOTS AND SOILS FROM PROPOSED SHORT TERM CONSTRUCTION TRAFFIC IMPACTS.
 11.2. TO PREPARE SITE, REMOVE ANY DEBRIS BY HAND AND SPREAD AN EVEN LAYER OF WOOD CHIP MULCH 8-12" THICK OVER THE ENTIRE AREA TO RECEIVE MATTING.
 11.3. MATTING SHALL BE INSTALLED IN A SINGLE LAYER ON MULCH.
 11.4. TOPSOIL SHALL NOT BE DISTURBED OR REMOVED. NO GRUBBING, GRADING, EXCAVATION OR EQUIPMENT TRAFFIC SHALL BE ALLOWED IN THE AREA TO RECEIVE RPM. EQUIPMENT MAY TRAVEL ON RPM AFTER IT IS INSTALLED, BUT SHOULD BE MINIMIZED. TRACKED EQUIPMENT SHOULD NOT TURN ON RPM TO AVOID DAMAGE.
 11.5. MATTING MATERIAL SHALL BE TENSAR ROADRAIN T-5 OR APPROVED EQUIVALENT.
 11.6. RPM SHALL BE INSTALLED BY A CERTIFIED ARBORIST.
 11.7. RPM SHALL NOT BE REMOVED BY SITE CONTRACTORS.
12. ROOT AERATION MATTING
 12.1. PERMANENT MATTING TO PROTECT EXISTING ROOTS AND SOILS FROM PROPOSED GRADE FILLS AND STRUCTURES.
 12.2. INSTALL A SINGLE LAYER OF MATTING ON EXISTING, UNDISTURBED GRADE. REMOVE DEBRIS BY HAND.
 12.3. TEMPORARY FENCING MUST BE INSTALLED IN THE AREAS TO RECEIVE RAM IF FILL IS NOT TO BE PLACED IMMEDIATELY AT THE BEGINNING OF CONSTRUCTION.
 12.4. TOPSOIL SHALL NOT BE DISTURBED OR REMOVED. NO GRUBBING, GRADING, EXCAVATION OR EQUIPMENT TRAFFIC SHALL BE ALLOWED IN THE AREA TO RECEIVE RAM. EQUIPMENT MAY TRAVEL ON RAM AFTER IT IS INSTALLED AND FILL MATERIAL PLACED, BUT SHOULD BE MINIMIZED.
 12.5. MATTING MATERIAL SHALL BE TENSAR ROADRAIN T-5 OR APPROVED EQUIVALENT.
 12.6. RAM SHALL BE INSTALLED BY A CERTIFIED ARBORIST.
 12.7. RAM IS PERMANENT AND SHALL NOT BE REMOVED BY SITE CONTRACTORS. FILL MATERIAL SHALL BE PLACED DIRECTLY ON RAM.
 12.8. FILTER FABRIC (SILT FENCE FABRIC) SHALL BE INSTALLED IN 2 LAYERS AS SHOWN IN THE DETAIL (NOT TRENCHED) TO PROTECT THE RAM CORE FROM CONTAMINATION. INSTALLATION OF SILT FENCE FOR EROSION CONTROL SHALL BE COORDINATED WITH THE ARBORIST AND MUST BE PERFORMED BY THE ARBORIST TO PREVENT DAMAGE TO TREE ROOTS FROM TRENCHING OPERATIONS. EROSION CONTROL SOCKS MAY BE USED IN LIEU OF SILT FABRIC.
13. SOIL CARE/ FERTILIZATION
 13.1. INITIAL SOIL TESTING WITHIN TREE PROTECTION AREAS IS REQUIRED. CONDUCT INDIVIDUAL SOIL TESTS FOR SEPARATE TREE PROTECTION AREAS (SMALL ADJACENT AREAS MAY BE TESTED TOGETHER). SOIL TEST SHALL BE A REPRESENTATIVE SAMPLE FROM EACH AREA.
 13.2. TREATMENTS TO THE TREE PROTECTION AREAS FOR SPECIFIED TREES (SEE TPAK) SHALL BE BASED ON THE RESULTS OF THE SOIL ANALYSIS. FERTILIZATION SHALL BE CONSISTENT WITH THE RECOMMENDATIONS OF THE ANSI A-300 (PART 2) TREE, SHRUB, AND OTHER WOODY PLANT MAINTENANCE - STANDARD PRACTICES (FERTILIZATION) 2004.
 13.3. APPLICATION RATES SHALL NOT EXCEED A RATE OF 1 POUND OF ACTUAL NITROGEN PER 1,000 SQUARE FEET ANNUALLY. FERTILIZER USED SHOULD INCLUDE HUMIC ACIDS, SOLUBLE SEAWEED EXTRACTS AND SOIL BIOLOGICAL INOCULANTS.
14. TREE CONDITION MONITORING INSPECTIONS
 14.1. CONTRACT ARBORIST SHALL PROVIDE MONITORING OF THE CONDITION OF RETAINED TREES IN TREE PROTECTION AREAS, AND TREATMENT OF DETRIMENTAL CONDITIONS (INSECTS, DISEASES, NUTRIENT DEFICIENCIES, SOIL MOISTURE, ETC.), AS THEY OCCUR, OR AS APPROPRIATE FOR EFFECTIVE MANAGEMENT.
 14.2. INSPECTIONS SHALL BE PERFORMED AT LEAST MONTHLY DURING THE GROWING SEASON, BEGINNING PRIOR TO CONSTRUCTION AND CONTINUING THROUGHOUT CONSTRUCTION AND FOR AT LEAST ONE YEAR SUBSEQUENT TO COMPLETION OF CONSTRUCTION ACTIVITIES.
 14.3. A WRITTEN SUMMARY REPORT INCLUDING SPECIFIC TREATMENTS MADE AND RECOMMENDATIONS FOR ADDITIONAL TREATMENTS SHALL BE PROVIDED TO THE OWNER AND PROJECT ARBORIST SUBSEQUENT TO EACH INSPECTION.
 14.4. REPORTS SHALL ALSO BE PROVIDED TO THE CITY ENVIRONMENTALIST.
15. TREE GROWTH REGULATOR (TGR)
 15.1. PACLOBUTRAZOL SOIL APPLIED TREE GROWTH REGULATOR (CAMBISTAT® OR EQUIVALENT) SHALL BE APPLIED TO INDICATED TREES. APPLICATIONS SHALL FOLLOW MANUFACTURER'S LABEL AND APPLICABLE LAWS.
 15.2. TGR REDUCES CANOPY GROWTH WHICH CAN INCREASE FIBROUS ROOT SYSTEM GROWTH OVER 2-3 YEARS. THIS CAN INCREASE TOLERANCE TO DROUGHT STRESS AND IMPROVE ABSORPTION OF NUTRIENTS AND MOISTURE DURING THE STRESS RECOVERY PERIOD.
16. INVASIVE SPECIES CONTROL/HUMAN HEALTH RISK MANAGEMENT
 16.1. A CERTIFIED ARBORIST SHALL INSPECT TREE PROTECTION AREAS FOR INVASIVE AND/OR EXOTIC PLANT SPECIES. FINDINGS SHALL BE DOCUMENTED AND SUBMITTED TO OWNER.
 16.2. ANY INVASIVE SPECIES FOUND SHALL BE REMOVED/TREATED BY THE CONTRACT ARBORIST TO MINIMIZE THE SPREAD OF NON-DESIREABLE SPECIES. TREATMENTS AND REMOVAL METHODS SHALL CONFORM TO LOCAL, STATE AND FEDERAL REGULATIONS AND ACCEPTED INDUSTRY STANDARDS. REFER TO ISA BEST MANAGEMENT PRACTICES. A TREATMENT PLAN SHALL BE DEVELOPED AND SUBMITTED TO OWNER AND *CITY OF ANNAPOLIS*.
 16.3. INVASIVE VINES SHALL BE HAND CUT AWAY FROM ALL RETAINED TREES.
 16.4. OWNER SHALL REMOVE FROM TREE PROTECTION AREAS, ALL DEBRIS THAT MAY POSE A HUMAN HEALTH RISK (SUCH AS METAL, WIRE OR GLASS). ANY OTHER CONDITION FOUND TO BE A POTENTIAL RISK SHALL BE REPORTED TO THE OWNER FOR FURTHER MANAGEMENT.

ADDITIONAL NOTES:

1. *TREE LOCATIONS MAY BE APPROXIMATE. OWNER AND CONTRACT ARBORIST SHALL VERIFY ALL TREE LOCATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND/OR TREATMENT OR REMOVAL.*
2. *THE INSPECTION OF THESE TREES CONSISTED SOLELY OF A VISUAL INSPECTION FROM THE GROUND. WHILE MORE THOROUGH TECHNIQUES ARE AVAILABLE FOR INSPECTION AND EVALUATION, THEY WERE NEITHER REQUESTED NOR CONSIDERED NECESSARY OR APPROPRIATE AT THIS TIME.*
3. *TREES RATED "POOR" OR "DEAD" THAT ARE NOT RECOMMENDED FOR REMOVAL DUE TO CONSTRUCTION IMPACT MAY WARRANT FURTHER EVALUATION AND/OR TREATMENT OR REMOVAL.*

Definitions

- Certified Arborist: Credential of an individual arborist issued and administered by the International Society of Arboriculture. This credential must be current and valid to qualify to use the copyrighted designation of "Certified Arborist". Refer to www.isa-arbor.com for additional information.
- Project Arborist: Arboricultural firm contracted to provide site investigation and documentation (tree inventories, assessments, forest stand delineations, etc.) and develop tree preservation plans, methods, details and specifications in collaboration with the project design team.
- Contract Arborist: Arboricultural firm contracted to implement the approved tree preservation plans on site. All crews conducting arboricultural operations on site shall consist of at least one Certified Arborist who directly oversees all work by that crew. Arboricultural operations include, but are not limited to, pruning, tree protection device installation and maintenance (fence, matting, etc.), root pruning, air tool root excavation/exploration, soil care activities, soil testing, mulch application, tree inspections, pesticide/chemical applications and tree removal.

State of Maryland
Forest Conservation Manual

Preliminary Forest Conservation Worksheet

for
Primrose Hill
7/1/13

	Net Tract Area		**ENTIRE PROPERTY**
A	Gross Tract Area	A =	4.37
B	Deductions (Critical Area, area restricted by local ordinance or program): floodplain	B =	0.00
C	Net Tract Area (C = A - B)	C=	4.37
	Land Use Category		**High Density**
	Afforestation Factor ($F_{afforest}$)		15.00%
	Conservation Factor ($F_{conservation}$)		20.00%
D	Afforestation Threshold (Net Tract Area x $F_{afforest}$)	D =	0.66
E	Conservation Threshold (Net Tract Area x $F_{conservation}$)	E =	0.87
	Existing Forest Cover		
F	Existing Forest Cover within the Net Tract Area	F =	0.00
G	Area of Forest Above Conservation Threshold	G =	0.00
	If existing forest cover (F) > conservation threshold (E),		
	then G = existing forest cover (F) - conservation threshold (E); otherwise G = 0.		
	Break Even Point		
H	Break Even (Amount of Forest that must be retained so that no mitigation is required)	H =	FALSE
	(1) If the area of forest above the conservation threshold (G) is greater than zero, then		
	H = (0.2 x the area of forest above conservation threshold (G)) + Conservation threshold (E)		
	(2) If the area of forest above the conservation threshold (G) = 0, then H = ex. Forest Cover (F)		
I	Forest clearing permitted without mitigation (I = existing forest cover (F) - break even point (H))	I =	0.00
	Proposed Forest Clearing		
J	Total area of forest to be cleared	J =	0.00
	Clearing above conservation threshold		0.00
	Clearing below conservation threshold		0.00
K	Total area of forest remaining (K = existing forest cover (F) - forest to be cleared (J))	K =	0.00
	Note: If forest to remain (K) is greater than or equal to break even point (H), then no planting is		
	required; otherwise, compute the planting requirement below (L, M, N, P, Q and R).		
	Planting Requirements		
L	Reforestation for clearing above the conservation threshold	L =	0.00
	(1) If the total area of forest to be retained (K) ≥ conservation threshold (E), then		
	L = the area of forest to be cleared (J) x 0.25; or		
	(2) If the forest to be retained (K) < conservation threshold (E), then		
	L = the area of forest above conservation threshold (G) x 0.25		
M	Reforestation for clearing below the conservation threshold	M =	0.00
	(1) If existing forest cover (F) > conservation threshold (E) and forest to be retained (K) <		
	conservation threshold (E), then M = 2.0 x (E - K)		
	(2) If the existing forest (F) ≤ conservation threshold (E), then M = 2.0 x forest to be cleared (J)		
N	Credit for retention above the conservation threshold	N =	0.00
	If the area of the forest to be retained (K) > conservation threshold (E), then N = K - E		
P	Total reforestation required (P = L + M - N)	P =	0.00
Q	Total afforestation required	Q =	0.66
	(1) If existing forest cover (F) < afforestation threshold (D), then		
	Q = the afforestation threshold (D) - the existing forest cover (F)		
R	Total planting requirement (R = P + Q)	R =	0.66

Note: Refer to sheet LJ-104 for tree replacement claculations. Future forest conservation areas may be required overtop existing and replacement tree areas.

TREE PROTECTION ACTION KEY (TPAK)

Tree #	DBH (Diameter at 4.5 feet above grade)	Common Name	Botanical Name	Age Estimate	Condition Rating %	Condition Rating	Approx Canopy Radius (FT)	SCRZ Structural Critical Root Zone Radius (feet)	CRZ Critical Root Zone Radius in Ft (1.5 ft radius/in DBH)	Removal	Removal By Arborist	Root Prune	Tree Protection Fence	Mulch	Year 1 Soil Care	Year 2 Soil Care	Year 3-5 Soil Care	Tree Growth Regulator	Tree Condition Inspections	Root Aeration Matting	Construction Oversight/Monitoring	"By Hand" Demolition	Canopy Prune	Comments	Additional Notes	Condition Notes
2	52	beech, European	*Fagus sylvatica*	111	63	Fair	45	12	78			X	X	X	X	X	X	X	X	X	X		X	RESTORATION PRUNE	Damaged, rotting trunk; copper cultivar, significant upper crown decline in 1 half, needs restoration prune, air layered limb, large trunk decay on declining side, english ivy at base, frass,	Large DW (3"+), Trunk Decay, Broken Limbs, Mechanical Damage,
3	42	pecan	*Carya illinoinensis*	105	67	Fair	40	11	63			X	X	X	X	X	X	X	X		X		X		large broken leader (14")	Large DW (3"+), Broken Limbs, Vines,
4	36	pecan	*Carya illinoinensis*	90	53	Fair	28	10	54			X	X	X	X	X	X	X	X	X	X			INSPECT CAVITY	Trunk cavity at base, further inspection required	One Sided, Trunk Decay, Basal Decay,
10	22	elm, spp.	*Ulmus spp.*	50	59	Fair	28	9	33	X															Some crown dieback; 23, 8, crown decline\thin crown,	Large DW (3"+), Vines,
13	28	maple, red	*Acer rubrum*	78	63	Fair	27	10	42	X															Some vine cover (English ivy)	Large DW (3"+), Broken Limbs, Weak Union, Vines,
18	25	pine, eastern white	*Pinus strobus*	63	58	Fair	21	10	38			X	X	X	X				X		X		X		poor vigor, thin crown	Large DW (3"+), Broken Limbs, Stressed, Vines,
19	29	oak, willow	*Quercus phellos*	62	70	Good	34	10	44			X	X	X	X				X		X		X			Full Crown, Large DW (3"+), Vines,
20	21	maple, red	*Acer rubrum*	58	41	Poor	25	9	32		X														Broken leader	Broken Limbs, Weak Union, Serious Decline,
25	27	oak, pin	*Quercus palustris*	57	70	Good	30	10	41			X	X	X	X	X			X		X		X			Large DW (3"+), Weak Union, Vines,
28	27	oak, willow	*Quercus phellos*	57	70	Good	30	10	41			X	X	X	X	X			X		X		X		Some vine cover (English ivy)	One Sided, Vines,
29	31	oak, willow	*Quercus phellos*	66	70	Good	30	10	47			X	X	X	X	X			X		X		X		Vine cover (English ivy) & broken limbs	One Sided, Large DW (3"+), Vines,
43	35	pecan	*Carya illinoinensis*	88	66	Fair	40	10	53			X	X	X	X	X			X		X					One Sided, Weak Union, Vines,
44	20	pecan	*Carya illinoinensis*	50	70	Good	22	9	30			X	X	X	X	X			X		X					One Sided, Suppressed,
45	38	pecan	*Carya illinoinensis*	95	72	Good	38	11	57			X	X	X	X	X			X		X					Full Crown, Vines,
46	31	pecan	*Carya illinoinensis*	78	63	Fair	25	10	47			X	X	X	X	X	X	X	X		X				Lightning strike; broken limbs	One Sided, Broken Limbs, Vines, Mechanical Damage,
50	25	locust, black	*Robinia pseudoacacia*	66	44	Poor	20	10	38	X															Severe crown dieback, broken limbs	Weak Union, Serious Decline,
56	45	boxelder	*Acer negundo*	79	44	Poor	35	11	68	X															Trunk cavity/ large decay area, crown dieback, vine cover	Trunk Decay, Branch Decay, Stressed, Vines,
59	25	elm, American	*Ulmus americana*	54	70	Good	33	10	38			X	X	X	X	X	X	X	X	X	X	X	X			Full Crown, Vines,
63	34	pecan	*Carya illinoinensis*	85	70	Good	34	10	51	X																Trunk Decay, Broken Limbs, Vines,
92	38	cherry, black	*Prunus serotina*	95	47	Poor	40	11	57	X															Twin with weak crotch, crown dieback, heavy vine cover, broken limbs	Large DW (3"+), Vines,
94	28	cherry, black	*Prunus serotina*	70	56	Fair	25	10	42	X															Leaning, vine cover (English ivy)	Vines, Overhead Utility,
112	28	cherry, black	*Prunus serotina*	70	48	Poor	20	10	42	X															Leaning, crown dieback, broken limbs	Large DW (3"+), Root Damage/Decay, Vines, Overhead Utility, Excessive Lean,
118	24	maple, red	*Acer rubrum*	67	56	Fair	18	10	36	X															Vine cover (English ivy)	Large DW (3"+), Trunk Decay, Vines, Overhead Utility,

DRAWN: C.J.H.	REV. NO. 2
DESIGN: C.J.H.	
CHECKED: C.A.C.	

BASED ON PLANS PROVIDED BY BAY ENGINEERING

REV.	DATE	COMMENT	BY
2	2/6/2014	PER CITY COMMENT AND REVISED CIVIL	CH
1	11/13/2013	PER CITY COMMENT AND REVISED CIVIL	CH

STATE OF MARYLAND LICENSED FORESTER NO. 323 CHRISTOPHER COWLES BOARD OF FORESTERS

DAVEY® RESOURCE GROUP
A Division of The Davey Tree Expert Company
Land Development Solutions
2138 Priest Bridge Ct, Suite 4, Crofton, MD 21114
Office 410.774.0024 • Fax 310.858.0184
National 877.818.7337

PRELIMINARY FOREST CONSERVATION PLAN

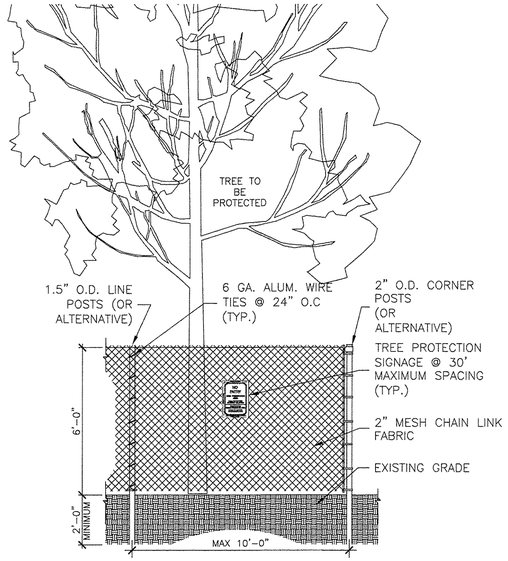
PRIMROSE HILL
3 MILKSHAKE LANE
CITY OF ANNAPOLIS, MARYLAND

CLIENT: ELM STREET DEVELOPMENT

SCALE: 1" = 30'

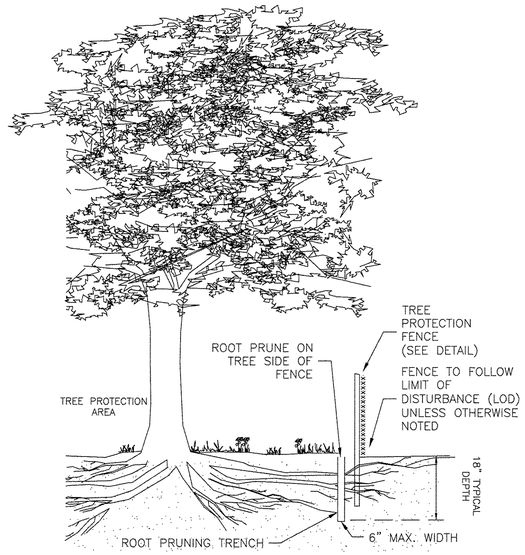
DATE: 07/02/2013

SHEET NO: LJ-102



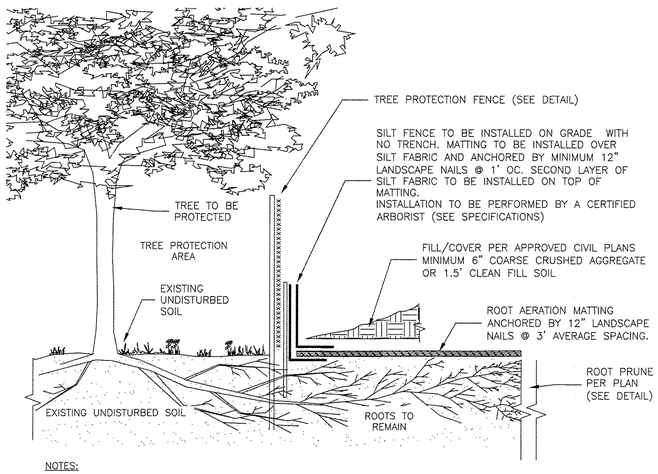
NOTES:
1. TREE PROTECTION FENCE SHALL BE INSTALLED PRIOR TO ANY SITE WORK, CLEARING OR DEMOLITION.
2. SUPER SILT FENCE MAY BE USED IN LIEU OF WELDED WIRE FOR TREE PROTECTION PROVIDED IT IS INSTALLED AND MAINTAINED AS A TREE PROTECTION MEASURE AND IS POSTED WITH TREE PROTECTION SIGNS.
3. TREE PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. REMOVE FENCE ONLY WITH APPROVAL AND AFTER ALL SITE WORK HAS BEEN COMPLETED.

1 LJ-103 CHAIN LINK TREE PROTECTION FENCE (TYPICAL)
SCALE: NTS



NOTES:
1. TREE PROTECTION AREA WILL BE DETERMINED AS PART OF THE PLAN REVIEW PROCESS. EXACT LOCATION, DEPTH AND METHODS OF ROOT PRUNING TO BE DETERMINED IN THE FIELD BY PROJECT ARBORIST.
2. EXACT LOCATION OF TREE PROTECTION AREAS SHALL BE STAKED OR FLAGGED PRIOR TO TRENCHING.
3. TRENCH SHOULD BE BACKFILLED IMMEDIATELY OR INCORPORATED WITH SILT FENCE INSTALLATION.
4. ROOTS SHOULD BE SEVERED BY TRENCHER, VIBRATORY PLOW OR APPROVED EQUIVALENT. ROOTS OVER 1.5" DIAMETER SHOULD BE CLEANLY CUT BY HAND. ROOT PRUNING ADJACENT TO SPECIMEN TREES MAY REQUIRE SOIL REMOVAL BY SUPERSONIC AIR TOOL TO MINIMIZE TREE AND ROOT IMPACTS.

2 LJ-103 ROOT PRUNING (TYPICAL)
SCALE: NTS



NOTES:
1. MATTING MATERIAL SHALL BE DOUBLE SIDED GEOCOMPOSITE, GEONET CORE WITH NON-WOVEN COVERING (SUCH AS TENSAR ROADRAIN T-5) OR APPROVED EQUIVALENT.
2. RAM SHALL BE ANCHORED BY 12" LANDSCAPE NAILS @ 4' AVERAGE SPACING.
3. RAM SHALL BE INSTALLED BY A CERTIFIED ARBORIST EXPERIENCED WITH THESE SYSTEMS.
4. PROPOSED RAM IN STRUCTURAL SITUATIONS SHALL BE REVIEWED AND APPROVED BY THE PROJECT CIVIL ENGINEER. ADDITIONAL LAYERS OF MATERIALS SUCH AS GEOGRID MAY BE REQUIRED.
5. ALL SITE PREPARATION/GRADING TO BE DONE USING SSAT TO MINIMIZE ROOT DAMAGE.
6. ALL ADJACENT WORK SHALL BE SUPERVISED BY CERTIFIED ARBORIST

3 LJ-103 ROOT AERATION MATTING (TYP)
SCALE: NTS

DRAWN:	C.J.H.
DESIGN:	C.J.H.
CHECKED:	C.A.C.
REV. NO.	2

BASED ON PLANS PROVIDED BY BAY ENGINEERING

REV.	DATE	COMMENT	CH	RY
2	2/6/2014	PER CITY COMMENT AND REVISED CRZ	CH	
1	11/13/2013	PER CITY COMMENT AND REVISED CRZ	CH	

STATE OF MARYLAND
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DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company

PRELIMINARY FOREST CONSERVATION PLAN

PRIMROSE HILL
3 MILKSHAKE LANE
CITY OF ANNAPOLIS, MARYLAND

CLIENT: ELM STREET DEVELOPMENT

SCALE: 1" = 30'
DATE: 07/02/2013
SHEET NO: LJ-103

Date: January 2014

TREE INVENTORY AND REPLACEMENT CALCULATIONS

Project: Milkshake Lane

Tree #	DBH (Diameter at 4.5 feet above grade)	Common Name	Botanical Name	Age Estimate	Condition Rating %	Condition Rating	Approx Canopy Radius (FT)	CRZ Critical Root Zone Radius in Ft (1.5 ft radius/in DBH)	Priority (1-4)	Tree Replacement: Within Roadway (Y/N)	Tree Replacement: Replacement Category	Tree Replacement: Replacements Required	Removal	Removal By Arborist	Additional Notes	Condition Notes
1	24	spruce, Norway	*Picea abies*	*46*	75	Good	17	36	1	NO	2	0			Some vine cover (bittersweet, poison ivy)	Small DW (1-2"), Vines,
2	52	beech, European	*Fagus sylvatica*	*111*	63	Fair	45	78	1	NO	3	0			Damaged, rotting trunk; copper cultivar, significant upper crown decline in 1 half, needs restoration prune, air layered limb, large trunk decay on declining side, english ivy at base, frass,	Large DW (3"+), Trunk Decay, Broken Limbs, Mechanical Damage,
3	44	pecan	*Carya illinoinensis*	*105*	67	Fair	40	66	2	NO	3	0			large broken leader (14")	Large DW (3"+), Broken Limbs, Vines,
4	38	pecan	*Carya illinoinensis*	*90*	53	Fair	28	57	2	NO	3	0			Trunk cavity at base, further inspection required	One Sided, Trunk Decay, Basal Decay,
5	14	spruce, Norway	*Picea abies*	*28*	70	Good	17	21	2	NO	1	0			Heavy vine cover (English ivy)	Small DW (1-2"), Vines,
6	7	boxelder	*Acer negundo*	*12*	63	Fair	15	11	3	NO	0.5	0			Vine cover (English ivy)	One Sided, Vines,
7	11	redcedar, eastern	*Juniperus virginiana*	*31*	66	Fair	15	17	2	NO	0.5	0			Vine cover (English ivy), broken limbs	Broken Limbs, Weak Union, Suppressed, Vines,
8	16	spruce, Norway	*Picea abies*	*32*	69	Fair	18	24	2	NO	1	0			Some vine cover (English ivy)	Vines,
9	21	spruce, Norway	*Picea abies*	*42*	70	Good	20	32	2	NO	2	0			Some vine cover (English ivy)	Vines,
10	23, 8	elm, spp.	*Ulmus spp.*	*50*	59	Fair	28	30	3	NO	3	3	X		Some crown dieback; 23, 8, crown decline\thin crown,	Large DW (3"+), Vines,
11	12	spruce, Norway	*Picea abies*	*24*	69	Fair	16	18	2	YES	1	0	X			One Sided, Vines,
12	16	spruce, Norway	*Picea abies*	*32*	72	Good	19	24	1	YES	1	0	X			Vines,
13	30	maple, red	*Acer rubrum*	*78*	63	Fair	27	45	3	NO	3	3	X		Some vine cover (English ivy)	Large DW (3"+), Broken Limbs, Weak Union, Vines,
14	22	oak, southern red	*Quercus falcata*	*33*	75	Good	29	33	1	YES	2	0	X			Full Crown,
15	7	dogwood, flowering	*Cornus florida*	*20*	59	Fair	14	11	3	NO	0.5	0.5		X	Some vine cover (English ivy); decline	Small DW (1-2"), Stressed, Vines,
16	7	dogwood, flowering	*Cornus florida*	*20*	55	Fair	14	11	3	NO	0.5	0.5		X		One Sided, Large DW (3"+), Stressed, Vines, Excessive Lean,
17	11	hornbeam, American	*Carpinus caroliniana*	*28*	63	Fair	20	17	1	NO	0.5	0			low branches	One Sided, Small DW (1-2"), Trunk Decay, Branch Decay, Weak Union, Vines,
18	29	pine, eastern white	*Pinus strobus*	*63*	58	Fair	21	44	3	NO	3	0			poor vigor, thin crown	Large DW (3"+), Broken Limbs, Stressed, Vines,
19	30	oak, willow	*Quercus phellos*	*62*	70	Good	34	45	1	NO	3	0				Full Crown, Large DW (3"+), Vines,
20	23	maple, red	*Acer rubrum*	*58*	41	Poor	25	35	4	NO	2	2		X	Broken leader	Broken Limbs, Weak Union, Serious Decline,
21	12	magnolia, southern	*Magnolia grandiflora*	*19*	69	Fair	16	18	1	NO	1	0			air layered,	One Sided, Excessive Lean,
22	14,14	holly, American	*Ilex opaca*	*22*	59	Fair	19	27	2	NO	3	0			Broken leader on one twin; damage from failed maple, thin crown,	Included Bark, Weak Union, Vines,
23	20	oak, southern red	*Quercus falcata*	*30*	67	Fair	30	30	1	NO	2	0			Heavy vine cover (English ivy)	One Sided, Large DW (3"+), Weak Union, Vines,
24	8	holly, American	*Ilex opaca*	*13*	66	Fair	10	12	2	NO	0.5	0				Included Bark, Weak Union, Vines,
25	29	oak, pin	*Quercus palustris*	*57*	70	Good	30	44	1	NO	3	0				Large DW (3"+), Weak Union, Vines,
26	9	holly, American	*Ilex opaca*	*15*	72	Good	13	14	2	NO	0.5	0				Vines,
27	10	holly, American	*Ilex opaca*	*17*	72	Good	14	15	2	NO	0.5	0				Full Crown, Vines,
28	27	oak, willow	*Quercus phellos*	*57*	70	Good	30	41	1	NO	3	0			Some vine cover (English ivy)	One Sided, Vines,
29	31	oak, willow	*Quercus phellos*	*66*	70	Good	30	47	1	NO	3	0			Vine cover (English ivy) & broken limbs	One Sided, Large DW (3"+), Vines,
30	9,5,4	maple, red	*Acer rubrum*	*28*	63	Fair	13	18	3	NO	2	0				One Sided, Small DW (1-2"), Weak Union,
31	9	maple, red	*Acer rubrum*	*22*	59	Fair	15	14	3	NO	0.5	0			Cavity	One Sided, Trunk Decay, Basal Decay,
32	7	hornbeam, American	*Carpinus caroliniana*	*18*	61	Fair	12	11	2	NO	0.5	0				One Sided, Excessive Lean,
33	15	hornbeam, American	*Carpinus caroliniana*	*38*	50	Fair	20	23	3	NO	1	0				Included Bark, Weak Union, Stressed,
34	12	hornbeam, American	*Carpinus caroliniana*	*30*	56	Fair	12	18	3	NO	1	0				One Sided, Trunk Decay, Stressed, Vines,
35	7	dogwood, flowering	*Cornus florida*	*20*	59	Fair	12	11	3	NO	0.5	0				One Sided, Small DW (1-2"), Trunk Decay, Vines,
36	9,8	dogwood, flowering	*Cornus florida*	*23*	50	Fair	13	17	3	NO	1	0			dead leader	Included Bark, Weak Union, Stressed, Serious Decline, Excessive Lean,
37	10	holly, American	*Ilex opaca*	*17*	70	Good	15	15	2	NO	0.5	0				Vines,
38	12,6,3	holly, Chinese	*Ilex cornuta*	*13*	70	Good	12	21	2	NO	2	0			3-trunk; leaves entire, Burford	Vines,
39	18	oak, southern red	*Quercus falcata*	*26*	72	Good	18	27	1	NO	2	2	X		vine cover (English ivy), possibly topped	Vines,
40	8	dogwood, flowering	*Cornus florida*	*23*	73	Good	15	12	2	YES	0.5	0	X			Small DW (1-2"), Vines,
41	6	dogwood, flowering	*Cornus florida*	*17*	69	Fair	10	9	3	YES	0.5	0	X			One Sided, Vines,
42	6,10	magnolia, southern	*Magnolia grandiflora*	*13*	64	Fair	12	17	2	NO	1	1		X	vine cover (English ivy); twin	Weak Union, Stressed, Vines,
43	38	pecan	*Carya illinoinensis*	*88*	66	Fair	40	57	2	NO	3	0				One Sided, Weak Union, Vines,
44	20	pecan	*Carya illinoinensis*	*50*	70	Good	22	30	2	NO	2	0				One Sided, Suppressed,
45	40	pecan	*Carya illinoinensis*	*95*	72	Good	38	60	1	NO	3	0				Full Crown, Vines,
46	31	pecan	*Carya illinoinensis*	*78*	63	Fair	25	47	2	NO	3	0			Lightning strike; broken limbs	One Sided, Broken Limbs, Vines, Mechanical Damage,
47	15	pecan	*Carya illinoinensis*	*38*	75	Good	20	23	1	NO	1	1	X			Vines,
48	9	goldenraintree	*Koelreuteria paniculata*	*18*	75	Good	15	14	1	NO	0.5	0.5	X			
49	10	pear, Callery	*Pyrus calleryana*	*15*	72	Good	10	15	3	NO	0.5	0.5	X			Weak Union,
50	30	locust, black	*Robinia pseudoacacia*	*66*	44	Poor	20	45	4	NO	3	3	X		Severe crown dieback, broken limbs	Weak Union, Serious Decline,
51	15,13	apple, common	*Malus pumila*	*23*	59	Fair	13	27	2	YES	3	0	X		twin	Trunk Decay, Broken Limbs,
52	7	pear, Callery	*Pyrus calleryana*	*11*	69	Fair	12	11	3	YES	0.5	0	X			Weak Union,
53	7	locust, black	*Robinia pseudoacacia*	*18*	70	Good	12	11	2	NO	0.5	0			Broken limbs	Small DW (1-2"),
54	11	maple, red	*Acer rubrum*	*31*	47	Poor	12	17	4	NO	0.5	0.5	X		Broken leader	Weak Union,
55	8,8	apple, common	*Malus pumila*	*13*	50	Fair	15	17	3	NO	1	1	X		Broken limbs, weak crotch	Large DW (3"+), Trunk Decay, Branch Decay, Broken Limbs, Weak Union, Vines,
56	46	boxelder	*Acer negundo*	*79*	44	Poor	35	69	3	NO	3	3	X		Trunk cavity/ large decay area, crown dieback, vine cover	Trunk Decay, Branch Decay, Stressed, Vines,
57	15	pecan	*Carya illinoinensis*	*38*	72	Good	25	23	2	NO	1	1	X			Vines,
58	10	magnolia, southern	*Magnolia grandiflora*	*16*	72	Good	14	15	2	NO	0.5	0.5	X			
59	25	elm, American	*Ulmus americana*	*54*	70	Good	33	38	1	NO	3	0				Full Crown, Vines,
60	21	elm, American	*Ulmus americana*	*46*	70	Good	27	32	1	YES	2	0	X			Large DW (3"+), Branch Decay, Vines,
61	13	honeylocust	*Gleditsia triacanthos*	*25*	66	Fair	18	20	3	NO	1	1	X		Some vine cover (English ivy)	Small DW (1-2"), Vines,
62	10,8,6	tree of heaven	*Ailanthus altissima*	*22*	59	Fair	18	24	4	NO	2	2	X		Crown dieback	Trunk Decay, Weak Union, Vines,
63	38	pecan	*Carya illinoinensis*	*85*	70	Good	34	57	1	NO	3	0				Trunk Decay, Broken Limbs, Vines,
64	20	catalpa, northern	*Catalpa speciosa*	*63*	61	Fair	16	30	2	NO	2	2	X		vine cover (poison ivy); crown dieback	Branch Decay, Vines,
65	21	chestnut, Chinese	*Castanea mollissima*	*42*	66	Fair	30	32	2	NO	2	2	X			One Sided, Large DW (3"+),
66	24	oak, southern red	*Quercus falcata*	*38*	63	Fair	20	36	2	NO	2	2	X		Broken limbs	One Sided, Small DW (1-2"), Broken Limbs, Stressed, Vines,
67	14	locust, black	*Robinia pseudoacacia*	*37*	59	Fair	20	21	3	NO	1	1	X		Broken limbs, vine cover (grape)	Stressed, Vines,
68	8	osage-orange	*Maclura pomifera*	*18*	61	Fair	14	12	3	NO	0.5	0.5	X		Leaning, vine cover (English ivy)	Broken Limbs,
69	17	cherry, black	*Prunus serotina*	*43*	63	Fair	15	26	3	NO	1	0			Broken limbs	Large DW (3"+), Broken Limbs, Weak Union, Vines,
70	14	oak, willow	*Quercus phellos*	*26*	56	Fair	15	21	3	NO	1	0			Broken limbs\leader	One Sided, Large DW (3"+), Broken Limbs, Vines,
71	8	oak, willow	*Quercus phellos*	*17*	56	Fair	12	12	3	NO	0.5	0				One Sided, Large DW (3"+), Broken Limbs, Vines,
72	8	oak, willow	*Quercus phellos*	*17*	70	Good	12	12	2	NO	0.5	0				Vines,
73	11	cherry, black	*Prunus serotina*	*28*	53	Fair	12	17	3	NO	0.5	0.5		X	Crown dieback, heavy vine cover	One Sided, Stressed, Vines, Excessive Lean,
74	19	cherry, black	*Prunus serotina*	*48*	53	Fair	14	29	3	NO	2	0			Crown dieback, heavy vine cover;; poor form	Large DW (3"+), Vines,
75	17	cherry, black	*Prunus serotina*	*43*	56	Fair	15	26	3	NO	1	1		X	Broken limbs; decline	Large DW (3"+), Vines,
76	14	elm, American	*Ulmus americana*	*30*	66	Fair	24	21	2	NO	1	1		X	Some vine cover (poison ivy)	Broken Limbs, Vines,
77	15	cherry, black	*Prunus serotina*	*38*	72	Good	25	23	2	YES	1	0	X			Large DW (3"+), Vines,
78	9	cherry, black	*Prunus serotina*	*23*	53	Fair	10	14	3	YES	0.5	0	X			Vines, Excessive Lean,
79	23	cherry, black	*Prunus serotina*	*50*	69	Fair	25	35	2	NO	2	2		X		Vines, Overhead Utility,
80	8	tree of heaven	*Ailanthus altissima*	*18*	69	Fair	12	12	3	NO	0.5	0.5		X		Overhead Utility,
81	7	redcedar, eastern	*Juniperus virginiana*	*20*	72	Good	9	11	2	NO	0.5	0.5	X			Small DW (1-2"), Vines,
82	15	cherry, black	*Prunus serotina*	*38*	63	Fair	16	23	3	NO	1	1	X		Vine cover (English ivy)	Vines,

DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company

Date: January 2014

TREE INVENTORY AND REPLACEMENT CALCULATIONS

Project: Milkshake Lane

Tree #	DBH (Diameter at 4.5 feet above grade)	Common Name	Botanical Name	Age Estimate	Condition Rating %	Condition Rating	Approx Canopy Radius (FT)	CRZ Critical Root Zone Radius in Ft (1.5 ft radius/in DBH)	Priority (1-4)	Tree Replacement: Within Roadway (Y/N)	Tree Replacement: Replacement Category	Tree Replacement: Replacements Required	Removal	Removal By Arborist	Additional Notes	Condition Notes
83	9	cherry, black	*Prunus serotina*	*23*	66	Fair	14	14	2	NO	0.5	0.5	X		Vine cover (English ivy), crown dieback	Broken Limbs, Vines,
84	12	cherry, black	*Prunus serotina*	*30*	34	Poor	8	18	4	NO	1	1	X		Leaning, broken limbs; topped from utility	Overhead Utility, Excessive Lean,
85	15	elm, American	*Ulmus americana*	*33*	64	Fair	22	23	2	NO	1	1	X		Heavy vine cover (English ivy)	Large DW (3"+), Vines,
86	10	cherry, black	*Prunus serotina*	*25*	55	Fair	10	15	3	NO	0.5	0.5	X		Vine cover (English ivy), crown dieback	Vines,
87	16,12	cherry, black	*Prunus serotina*	*40*	58	Fair	17	27	3	NO	3	3	X		Leaning, vine cover (English ivy)	Vines,
88	7	elm, slippery	*Ulmus rubra*	*15*	55	Fair	12	11	3	NO	0.5	0.5	X		Vine cover (English ivy), broken limbs	Vines, Excessive Lean,
89	8	cherry, black	*Prunus serotina*	*18*	64	Fair	13	12	2	NO	0.5	0.5	X		Vine cover (English ivy)	One Sided, Suppressed, Vines,
90	19	cherry, black	*Prunus serotina*	*33*	50	Fair	18	29	3	NO	2	2	X		3-trunk, vine cover; broken limbs	Large DW (3"+), Broken Limbs, Vines,
91	11	pear, common	*Pyrus communis*	*17*	63	Fair	15	17	2	NO	0.5	0.5	X		tall specimen,	Broken Limbs, Vines,
92	38	cherry, black	*Prunus serotina*	*95*	47	Poor	40	57	3	NO	3	3	X		Twin with weak crotch, crown dieback, heavy vine cover, broken limbs	Large DW (3"+), Vines,
93	11	cherry, black	*Prunus serotina*	*28*	55	Fair	8	17	3	NO	0.5	0.5	X		Leaning, vine cover (English ivy)	Large DW (3"+), Broken Limbs, Vines, Excessive Lean,
94	28	cherry, black	*Prunus serotina*	*70*	56	Fair	25	42	3	NO	3	3	X		Leaning, vine cover (English ivy)	Vines, Overhead Utility,
95	18	pine, eastern white	*Pinus strobus*	*45*	66	Fair	15	27	2	NO	2	2	X		Broken limbs	One Sided, Broken Limbs, Vines, Overhead Utility,
96	20	pine, eastern white	*Pinus strobus*	*50*	72	Good	16	30	2	NO	2	2	X		Broken limbs	Vines,
97	15	pine, eastern white	*Pinus strobus*	*38*	59	Fair	14	23	3	NO	1	1	X		Broken limbs	One Sided, Broken Limbs, Vines, Overhead Utility,
98	11	elm, spp.	*Ulmus spp.*	*24*	63	Fair	12	17	3	NO	0.5	0.5	X			Vines, Overhead Utility,
99	17	chestnut, Chinese	*Castanea mollissima*	*34*	59	Fair	22	26	3	NO	1	1	X		Severe crown dieback	One Sided, Large DW (3"+), Vines,
100	7	apple, common	*Malus pumila*	*12*	53	Fair	10	11	3	NO	0.5	0.5	X		Broken limbs	Large DW (3"+), Trunk Decay,
101	21	cherry, black	*Prunus serotina*	*53*	66	Fair	25	32	2	NO	2	2	X		Broken limbs, vine cover	Broken Limbs, Vines, Overhead Utility,
102	9	pine, eastern white	*Pinus strobus*	*23*	38	Poor	12	14	4	NO	0.5	0.5	X		Crown dieback, heavy vine cover	Serious Decline,
103	15	catalpa, northern	*Catalpa speciosa*	*50*	53	Fair	20	23	3	NO	1	1	X		Crown dieback	Large DW (3"+), Vines, Serious Decline,
104	17	catalpa, northern	*Catalpa speciosa*	*57*	61	Fair	18	26	2	NO	1	1	X		Crown dieback	Small DW (1-2"), Weak Union, Vines,
105	23	catalpa, northern	*Catalpa speciosa*	*77*	72	Good	18	35	2	NO	2	2	X		Vine cover (English ivy)	Small DW (1-2"), Vines,
106	10	cherry, black	*Prunus serotina*	*25*	66	Fair	11	15	3	NO	0.5	0.5	X		Vine cover (English ivy)	Vines,
107	21	catalpa, northern	*Catalpa speciosa*	*70*	70	Good	20	32	2	NO	2	2	X			Small DW (1-2"), Vines,
108	18	catalpa, northern	*Catalpa speciosa*	*60*	67	Fair	15	27	2	NO	2	2		X		One Sided, Small DW (1-2"), Vines,
109	15	cherry, black	*Prunus serotina*	*38*	56	Fair	18	23	3	NO	1	1	X		Heavy vine cover (English ivy)	Vines, Excessive Lean,
110	13	elm, spp.	*Ulmus spp.*	*28*	56	Fair	14	20	3	NO	1	1	X		Leaning, vine cover (English ivy)	Vines, Excessive Lean,
111	13	elm, spp.	*Ulmus spp.*	*28*	72	Good	16	20	2	NO	1	1	X			Vines,
112	28	cherry, black	*Prunus serotina*	*70*	48	Poor	20	42	4	NO	3	3	X		Leaning, crown dieback, broken limbs	Large DW (3"+), Root Damage/Decay, Vines, Overhead Utility, Excessive Lean,
113	16	cherry, black	*Prunus serotina*	*40*	64	Fair	12	24	3	NO	1	1	X		Heavy vine cover (English ivy); topped by utility	Overhead Utility, Excessive Lean,
114	8	pine, eastern white	*Pinus strobus*	*20*	50	Fair	10	12	3	NO	0.5	0.5	X		poor form	Vines,
115	22	cherry, black	*Prunus serotina*	*55*	63	Fair	18	33	3	NO	2	2	X		Vine cover (English ivy)	Vines, Overhead Utility,
116	12	cherry, black	*Prunus serotina*	*30*	58	Fair	15	18	3	NO	1	1	X		Leaning, broken limbs	Trunk Decay, Vines, Overhead Utility,
117	10	pear, Callery	*Pyrus calleryana*	*15*	59	Fair	10	15	3	NO	0.5	0.5	X			Trunk Decay, Vines, Overhead Utility,
118	24	maple, red	*Acer rubrum*	*67*	56	Fair	18	36	3	NO	2	2	X		Vine cover (English ivy)	Large DW (3"+), Trunk Decay, Vines, Overhead Utility,
119	20	cherry, black	*Prunus serotina*	*50*	38	Poor	18	30	4	NO	2	2	X		Severe crown dieback	Overhead Utility, Serious Decline,
120	18	pine, eastern white	*Pinus strobus*	*45*	63	Fair	12	27	3	NO	2	2	X		Leaning, vine cover (English ivy)	Small DW (1-2"), Vines, Overhead Utility,
121	12	locust, black	*Robinia pseudoacacia*	*32*	69	Fair	16	18	2	NO	1	1	X			Overhead Utility,
122	11	pine, eastern white	*Pinus strobus*	*28*	56	Fair	12	17	3	NO	0.5	0.5	X		Broken limbs	One Sided, Broken Limbs, Vines, Overhead Utility,
123	13	cherry, black	*Prunus serotina*	*30*	48	Poor	12	20	3	NO	1	1	X		Leaning, broken leader	Trunk Decay, Broken Limbs, Excessive Lean,
124	16	oak, sawtooth	*Quercus acutissima*	*23*	63	Fair	18	24	2	NO	1	1	X		Crown dieback, vine cover (English ivy)	Broken Limbs, Stressed, Vines, Overhead Utility,
125	12	elm, American	*Ulmus americana*	*20*	63	Fair	15	18	3	NO	1	1	X		severe vines	Vines,
126	13	locust, black	*Robinia pseudoacacia*	*34*	44	Poor	14	20	4	NO	1	1	X			Large DW (3"+), Trunk Decay, Vines, Excessive Lean,
127	11,8	pear, common	*Pyrus communis*	*17*	58	Fair	12	20	3	NO	2	2	X		Broken limbs	Trunk Decay, Broken Limbs, Weak Union,
128	9,10,3	cherry, black	*Prunus serotina*	*23*	70	Good	13	23	2	NO	2	2	X		3-trunk	Weak Union,
129	7	mulberry, spp.	*Morus spp.*	*11*	72	Good	15	11	2	NO	0.5	0.5	X			Weak Union,
130	12	pine, eastern white	*Pinus strobus*	*30*	75	Good	12	18	2	NO	1	1	X			
131	12	pine, eastern white	*Pinus strobus*	*30*	75	Good	12	18	2	NO	1	1	X			
132	11	pine, eastern white	*Pinus strobus*	*28*	73	Good	13	17	2	NO	0.5	0.5	X			
133	10	ash, white	*Fraxinus americana*	*16*	69	Fair	13	15	2	NO	0.5	0.5	X		Some crown dieback	Small DW (1-2"), Stressed,
134	10	ash, white	*Fraxinus americana*	*18*	50	Fair	12	15	3	NO	0.5	0.5	X		Crown dieback, broken limbs	Serious Decline,
135	13	catalpa, northern	*Catalpa speciosa*	*43*	56	Fair	15	20	3	NO	1	1	X		Severe crown dieback	One Sided, Stressed, Serious Decline,
136	10	pine, eastern white	*Pinus strobus*	*25*	66	Fair	10	15	3	NO	0.5	0.5	X			Included Bark, Weak Union,
137	8	pine, eastern white	*Pinus strobus*	*20*	59	Fair	10	12	3	NO	0.5	0.5	X		Crown dieback	Small DW (1-2"), Stressed,
138	9	ash, white	*Fraxinus americana*	*16*	64	Fair	13	14	2	NO	0.5	0.5	X			Vines,
139	9	ash, white	*Fraxinus americana*	*16*	63	Fair	12	14	2	NO	0.5	0.5	X			
140	10	ash, white	*Fraxinus americana*	*18*	63	Fair	12	15	3	NO	0.5	0.5	X			
141	11	ash, white	*Fraxinus americana*	*19*	55	Fair	15	17	3	NO	0.5	0.5	X		Crown dieback	Weak Union, Stressed, Vines,
142	14	cherry, black	*Prunus serotina*	*35*	38	Poor	0	21	4	NO	1	1		X	severe lean over adjacent yard and utility	Overhead Utility, Serious Decline, Excessive Lean,
									TOTALS:	10		109.5	89	11		

DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company

TREE REPLACEMENT NOTE:

- 110 REPLACEMENT TREES REQUIRED FOR TREES PROPOSED TO BE REMOVED BY CONSTRUCTION
- 49 ADDITIONAL REPLACEMENT TREES REQUIRED FOR MITIGATION OF TREES PREVIOUSLY REMOVED
- 159 TOTAL REPLACEMENT TREES REQUIRED

DRAWN: C.J.H.
DESIGN: C.J.H.
CHECKED: C.A.C.
REV. NO. 2

BASED ON PLANS PROVIDED BY BAY ENGINEERING

REV.	DATE	COMMENT	BY
2	2/6/2014	PER CITY COMMENT AND REVISED CIVIL	CH
1	11/13/2013	PER CITY COMMENT AND REVISED CIVIL	CH

STATE OF MARYLAND · LICENSED FORESTER · CHRISTOPHER COWLES · NO. 323 · BOARD OF FORESTERS · 02-06-2014

Land Development Solutions
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Office 410.774.0024 • Fax 310.858.0184
National 877.818.7337

DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company

PRELIMINARY
FOREST CONSERVATION PLAN

PRIMROSE HILL
3 MILKSHAKE LANE
CITY OF ANNAPOLIS, MARYLAND

CLIENT: ELM STREET DEVELOPMENT

SCALE 1" = 30'
DATE: 07/02/2013
SHEET NO: LJ-104